

Appl. No. 10/711,836
Amdt. dated January 29, 2008
Reply to Office action of November 02, 2007

Amendments to the Drawings:

The attached drawing sheet includes changes made to Fig. 1. The drawing sheet, which includes Fig. 1, replaces the original sheet including Fig. 1.

Attachment: Replacement Sheet

1 page

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REMARKS/ARGUMENTS

Amendments to the Specification

Original specification paragraphs [0004] and [0023] have been amended to correct typographical errors.

- 5 Original specification paragraph [0024] also has been amended to correct typographical errors. In addition, as stated in the original specification paragraph [0024] that it should also be noted that in this embodiment, because the present invention uses the OPC process as the power relationship correction operation that is performed at the manufacturer, there is no concern with interfering with user data stored on the optical disc, the specification paragraph
10 [0024] has been amended to more clearly define a user data area of the optical disc that is not processed by the OPC process originally for writing test data thereto. The applicant believes that no new matter is introduced.

Amendments to the Claims

- 15 Claims 6 and 15 have been amended to replace the original limitation “a non-OPC area of the optical medium” with the limitation “a data area of the optical medium”. This is fully supported by specification paragraph [0024], and no new matter is introduced.

- 20 Claim 1 has been amended to rewrite the original limitations included therein for more clearly defining the claimed operation of converting received monitor signal digital values to corresponding digital power values according to a predetermined conversion rule. As stated in specification paragraph [Para 22] of applicant’s disclosure, the microprocessor converts the monitor values into power values according to the predetermined conversion rule.

- 25 Claim 10 has been amended to rewrite the original limitations included therein to more clearly specify the claimed operation performed by the microprocessor for converting received monitor signal values to corresponding power values according to a predetermined conversion rule. No new matter is introduced.

Claim 19 is newly added and includes certain limitations recited in original claims 1,

4, 5, and 6. No new matter is introduced.

Claim Rejections

Claims 1-5, 7, 10-14, and 16 are rejected under 35 USC 102(b) as being anticipated by Call (US 5,640,381). Claims 1, 4, 5, 7-10, 13, and 17-18 are rejected under 35 USC 102(b) as being anticipated by Kenjo (US 5,029,155).

Response

Claims 1 and 10

10 The applicant asserts that neither Call nor Kenjo discloses all the limitations of claims 1 and 10.

Regarding claim 1, according to Call's disclosure, Examiner asserts that Call discloses the monitor signal (input to an ADC 63) being indicative of the laser beam intensity, thus corresponding to the recited conversion rule, and a plurality of monitor signal values being captured, resulting from a plurality of laser power levels, i.e., drive signal values. The applicant respectfully points out that the claimed limitations "converting received monitor signal values for a plurality of drive signal values to **corresponding powers** of the light emitting device according to **a predetermined conversion rule**" and "**determining a preliminary power relationship** relating values of the drive signal to powers of the light emitting device according to received monitor signal values for a the plurality of drive signal values and **the predetermined conversion rule**" recited in the currently amended claim 1 are not anticipated by Call. The rationale is given below.

Referring to Call's disclosure col. 6, lines 46-52, Call discloses that a transconductance amplifier 60 and variable resistor respond to the diode 37 electrical signal to supply a laser 25 emitted beam intensity indication (i.e. monitor signal) to analog-to-digital converter (ADC) 63. Deserializer 70 then continuously receives the digitized value of the laser 25 beam intensity for distribution to ADC register 71. As described above, Call merely teaches or suggests using the ADC 63 to convert the monitor signal into a **digitized monitor**

signal. The applicant asserts that Call fails to teach using a predetermined conversion rule to convert received monitor signal values for a plurality of drive signal values to **corresponding powers of the light emitting device.**

Additionally, in col. 11, lines 35-40, Call discloses that two different laser power levels (i.e. drive signal values) are supplied to laser 25 in a linear range of a laser power curve and then resultant measured laser beam intensity values (i.e. monitor signal values) are captured in ADC register 71 and transferred through internal interface 80 to other circuits 11A. That is, Call teaches that the **monitor signal values are generated** from the **drive signal values** through the laser 25. The applicant therefore believes that the claimed limitation “**determining a preliminary power relationship** relating values of the drive signal to powers of the light emitting device according to received monitor signal values for a the plurality of drive signal values and the **predetermined conversion rule**” is not anticipated by the teaching of Call.

Regarding the teaching of Kenjo, in col. 4, lines 12-16, Kenjo discloses that the anode of the photodiode 5 is at a potential which corresponds to the intensity of light which is received by the photodiode 5, which potential is the output of the monitor circuit 22. That is, Kenjo merely states that the anode of the photodiode 5 (i.e. the output of the monitor circuit 22) corresponds to the intensity of light. Even though a monitor signal (i.e. the output of the monitor circuit 22) corresponds to the intensity of light, Kenjo fails to teach **converting** the output of the monitor circuit 22 into **corresponding powers** according to **a predetermined conversion rule.**

In addition, in col. 4, lines 16-24, Kenjo discloses that the monitor output of the monitor circuit 22 (i.e. the monitor signal) is input to a read power control circuit 23, which produces a laser light power control signal to control a current supplied from a laser drive circuit 24 to the diode laser 4. The current which is supplied from the laser drive circuit 24 to the diode laser 4 is controlled by the control signal of the read power control circuit 23 in such a way that a level of power of the diode laser 4 is at a suitable value. In other words,

Kenjo teaches that the read power control circuit 23 controls a level of power of the diode laser 4 according to the monitor output of the monitor circuit 22. The applicant asserts that the claimed limitations “**converting received monitor signal values** for a plurality of drive signal values to **corresponding powers** of the light emitting device according to a

- 5 **predetermined conversion rule**” and “**determining a preliminary power relationship** relating values of the drive signal to powers of the light emitting device according to received monitor signal values for a the plurality of drive signal values and **the predetermined conversion rule**” are not anticipated by the teaching of Kenjo.

In light of at least above reasons, the applicant asserts that neither Call nor Kenjo
10 teaches or suggests all the limitations of claim 1, and claim 1 should be found allowable over Call and Kenjo. As arguments regarding to the rejection to claim 10 are the same as the above-mentioned arguments for the rejection to claim 1, the claimed limitation “a microprocessor coupled to the light emitting device and the photo monitor . . . , and determining a preliminary power relationship relating values of the drive signal to powers of
15 the light emitting device according to received monitor signal values for the plurality of drive signal values and the predetermined conversion rule” recited in claim 10 is also not anticipated by Call or Kenjo and therefore claim 10 should be found allowable over Call and Kenjo.

Briefly summarized, claims 1 and 10 have overcome the rejections under 35 USC
20 102(b) and been placed in condition for allowance. Withdrawal of the rejections to claims 1 and 10 is respectfully requested.

Claims 2 and 11

The applicant asserts that Call fails to disclose all the limitations of claims 2 and 11.
25 Regarding claim 2, further description for determining the preliminary power relationship relating the values of the drive signal to the powers of the light emitting device is illustrated. In view of the rejection for claim 2, Examiner states that the limitations of claim 2 are found in steps 218, 224-226 of FIG. 9 and Call’s disclosure; in the rejection for claim 1,

Examiner, however, states that the step of determining the preliminary power relationship relating the values of the drive signal to the powers of the light emitting device is found in col. 11, lines 35-40, which corresponds to the descriptions of steps 215 and 216 in FIG. 9.

Referring to FIG. 9 and related description, the applicant finds that the steps 218 and 224-226 5 are different from the steps 215 and 216, and these steps 218, 224-226, 215, and 216 all belong to the flow shown in FIG. 9. The applicant deems that the rejection for claim 2 is contradictory to the rejection for claim 1.

In addition, referring to steps 224-226 of FIG. 9 and related explanations of Call's disclosure, Call discloses recording the calibration pattern in a plurality of sectors on the 10 optical disk being calibrated, reading all of the sector recorded copies of the calibration pattern, and analyzing the read copies for creating a table of read back signal values for the laser power level being calibrated. In other words, Call teaches **recording test patterns** into sectors on the optical disk being calibrated and then **analyzing the copies of the recorded test patterns** to creating a table for calibrating laser power levels. The applicant asserts that 15 Call fails to teach or suggest the claimed limitation "converting the received monitor signal values corresponding to drive signal values **being higher than the offset value** to power values according to the predetermined conversion rule to thereby generate the preliminary power relationship" recited in claim 2. Claim 2 therefore should be found allowable over Call. Additionally, as arguments for the rejection to claim 11 are identical to arguments for the 20 rejection to claim 2, claim 11 should also be allowable over Call.

Besides, claims 2 and 11 are dependent upon claims 1 and 10, respectively, and should be allowed if claims 1 and 10 are allowable.

Claims 3 and 12

Call fails to disclose all the limitations of claims 3 and 12. In steps 222-227, Call 25 merely teaches recording a calibration pattern and then analyzing the recorded calibration pattern to calibrate laser power levels. Additionally, in steps 219 and 220, Call only suggests to set a cut level as zero emission level of laser power. The applicant believes that the claimed

limitations “converting the extrapolated monitor signal values of the line corresponding to drive signal values being higher than the offset value to power values according to the predetermined conversion rule to thereby generate the preliminary power relationship” recited in claims 3 and 12 are not anticipated by the teaching of Call. Furthermore, claims 3 and 12
5 are dependent upon claims 2 and 11, respectively, and should be allowed if claims 2 and 11 are found allowable.

Claims 4 and 13

Neither Call nor Kenjo discloses the limitations of claims 4 and 13. Referring to
10 steps 232-234 of Call’s disclosure, Call teaches to compare the laser test pulse value with the original desired scale value of the laser beam and to change the SCALE LEVEL value to adjust for changes in the laser beam intensity (i.e. the monitor signal stated in the rejection to claim 1). In other words, Call merely suggests comparing the laser test pulse value with the original desired scale value of the laser beam for **adjusting the monitor signal values**. The
15 applicant believes that the claimed limitation “analyzing the read signal to determine if the test data was written to the optical medium at the particular power and correspondingly
adjusting the preliminary power relationship such that the test data is written to the optical medium at the predetermined power to thereby generate the final power relationship” recited in Claims 4 and 13 are not anticipated by Call. Regarding the teaching of Kenjo in col. 5,
20 lines 21-29, Kenjo discloses that the calculation circuit 28 compares the digital output of the monitor circuit 22 with the initially output power level directing value and corrects the initial directing value by adding a difference value (if there is a difference between these two outputs) to the directing value so as to obtain a directing value which is an objective value for each sector. That is, Kenjo merely teaches that the calculation circuit 28 compares the digital
25 output of the monitor circuit 22 with the initial output power level directing value to obtain an objective directing value for each sector. Kenjo fails to disclose obtaining objective directing values by further referring to a power relationship and therefore fails to teach obtaining predetermined power values according to the power relationship. The applicant deems that

the claimed limitation “writing test data to the optical medium of the optical device using a particular drive signal value for a predetermined power value according to **the preliminary power relationship**” recited in claim 4 is not anticipated by Kenjo. Additionally, as Kenjo merely suggests how to **obtain objective directing values** in col. 5, lines 21-29, the applicant 5 believes that the claimed limitation “**analyzing the read signal** to determine if the test data was written to the optical medium at the particular power and correspondingly **adjusting the preliminary power relationship** such that the test data is written to the optical medium at the predetermined power to thereby generate the final power relationship” is also not anticipated by Kenjo.

10 In light of at least above reasons, the applicant asserts that neither Call nor Kenjo teaches or suggests all the limitations of claim 4, and claim 4 should be found allowable over Call and Kenjo. As arguments regarding to the rejection to claim 13 are the same as the above-mentioned arguments for the rejection to claim 4, neither Call nor Kenjo teaches or suggests all the limitations of claim 13 and claim 13 should be found allowable over Call and 15 Kenjo. Furthermore, claims 4 and 13 are dependent upon claims 1 and 10, respectively, and should be allowed if claims 1 and 10 are found allowable.

Claims 5, 7-9, 14, and 16-18

Claims 5 and 7-9 are dependent upon claim 1 and should be allowed if claim 1 is 20 found allowable. Similarly, claims 14 and 16-18 are dependent upon claim 10 respectively and should be allowed if claim 10 is found allowable.

Other Matter

Claims 6 and 15 have been amended to clearly define that an optimum power control 25 (OPC) is performed on a data area of the optical medium, where **the data area is not originally dedicated to performing the OPC**. Upon careful review of Call’s and Kenjo’s teachings, the applicant finds no description pertinent to this claimed feature. The applicant asserts that this claimed feature is not taught or suggested by the cited prior art, alone or in

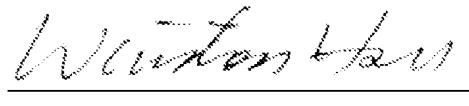
Appl. No. 10/711,836
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combination. Therefore, claims 6 and 15 should be found allowable over the cited prior art. In addition, claims 6 and 15 are dependent upon claims 1 and 10 respectively, and should be allowed if claims 1 and 10 are found allowable.

Claim 19 is newly added and includes above-identified limitations directed to performing an OPC a data area that is not originally dedicated to performing the OPC. Similarly, as this claimed feature is not taught or suggested by the cited prior art, alone or in combination, the applicant asserts that claim 19 should be found allowable over the cited prior art.

10 Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

15  Date: 01.29.2008

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